BMEN90005 Neuroimaging Methods and Applications

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 24 hours of lectures and 12 hours of tutorials/supervised learning sessions. Total Time Commitment: 120 hours for the semester
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
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Subject Overview:	This subject introduces students to modelling and analysis techniques used in brain imaging research, based on magnetic resonance imaging (MRI) data. The course will include: basic techniques for analysing structural, functional and diffusion MR images; techniques for modelling functional MR time series datasets.
Objectives:	The course objectives are to train students in the principles and practice of modelling and analysing MRI data in the context of neuroscience research. The course will provide students with a detailed understanding of MRI image processing, including structural, functional and diffusion MR data. Students will be instructed in the use of image analysis software, and will utilise this understanding to complete three computer based projects.
Assessment:	One 2-hour examination (50%)Three computer laboratory projects (Total 50%)
Prescribed Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion of this subject students should have developed the following generic skills

	# Ability to apply knowledge of basic science and engineering fundamentals # In-depth technical competence in at least one engineering discipline # Ability to undertake problem identification, formulation and solution # Ability to utilise a systems approach to design and operational performance # Capacity for independent critical thought, rational inquiry and self-directed learning # Ability to communicate effectively, with the engineering team and with the community at large
Related Course(s):	Graduate Certificate in Engineering (Environmental Engineering) Master of Biomedical Engineering Postgraduate Certificate in Engineering